Achieving Strategic Landscape Conservation in Eastern NC and Southeastern VA

Working Together to Meet the Challenges of a Changing World

Pete Campbell, U.S. Fish and Wildlife Service
SALCC Biological Objectives Workshop
October 2, 2012

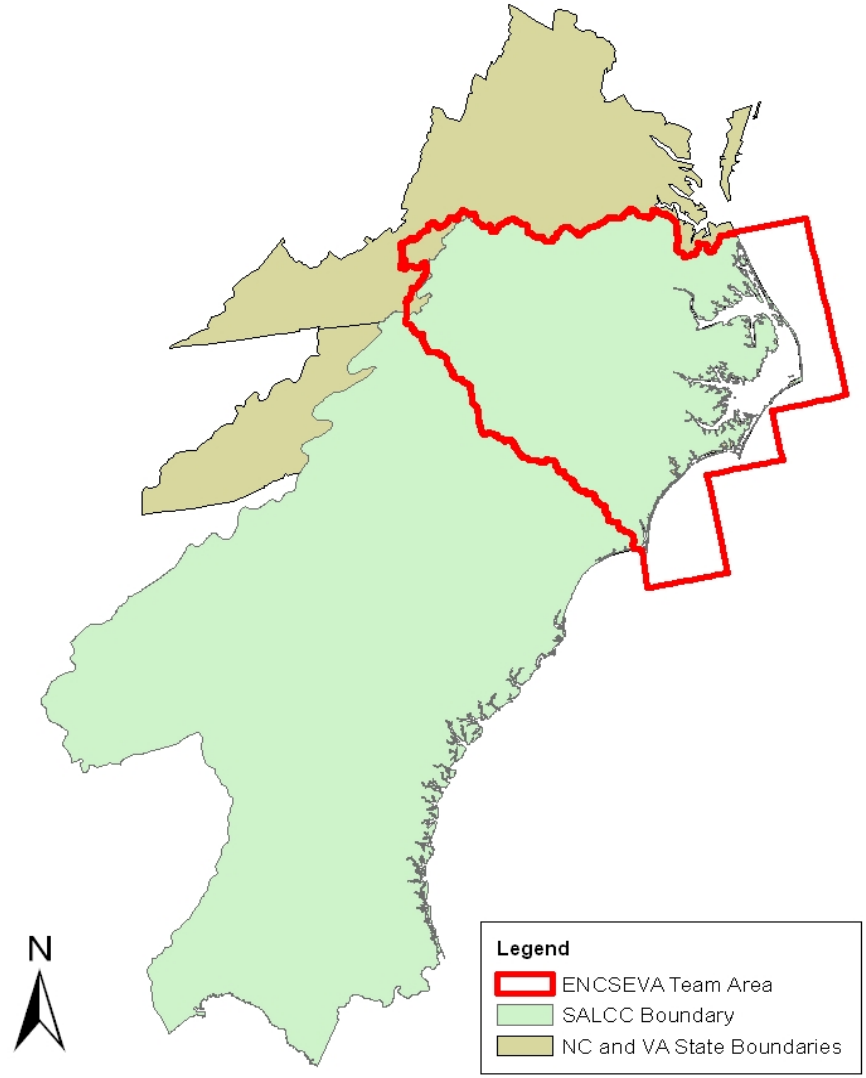
Topics

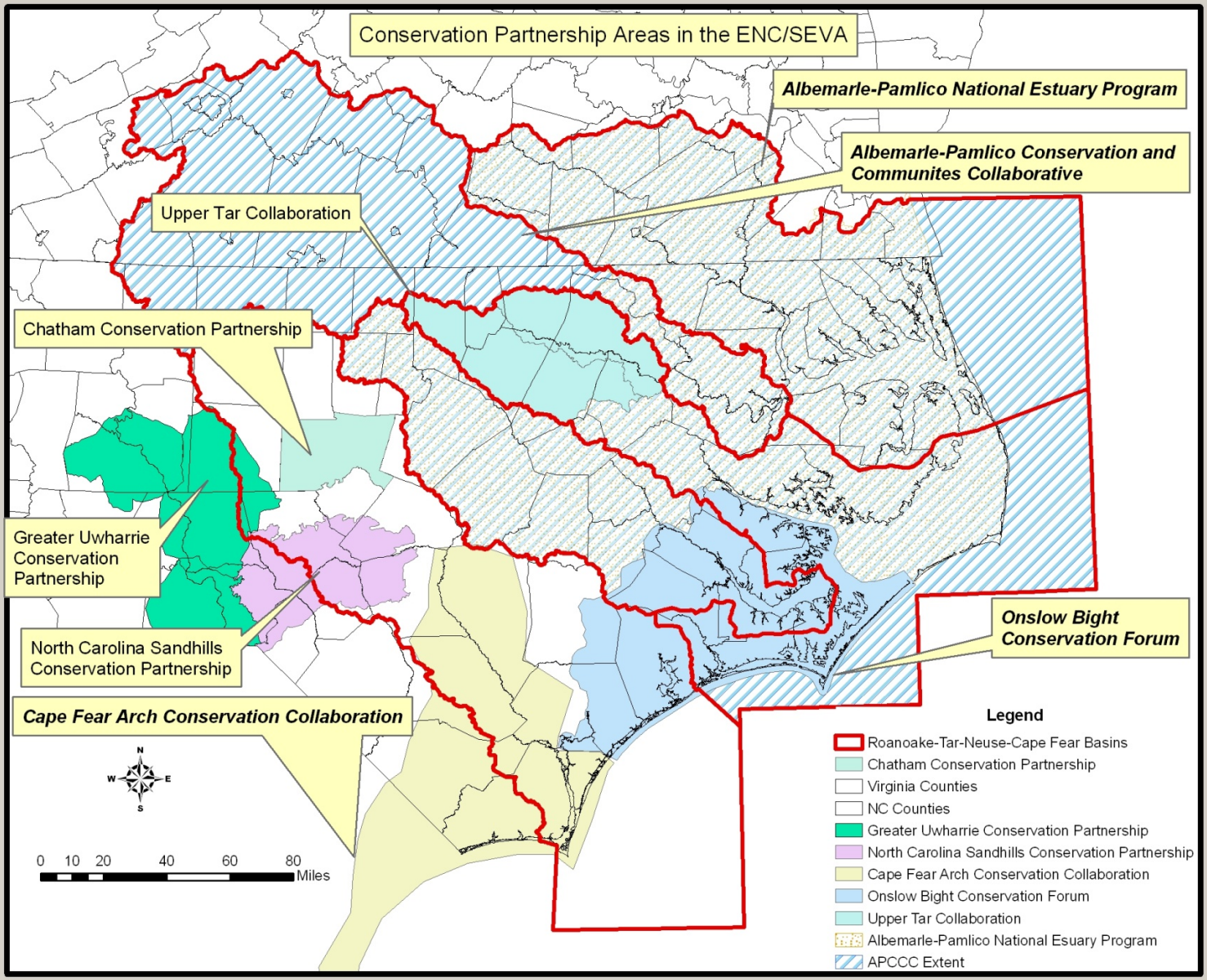
- ENC/SEVA SHC Team Background
- Planning Process
- Lessons Learned/Still Learning

ENC/SEVA SHC Team Composition

- National Park Service
- U.S. Fish and Wildlife Service
  - VA and NC Ecological Services
  - VA and NC Refuges
  - Fisheries
  - Migratory Birds
- U.S. Geological Survey
  - NC and VA Water Science Centers
  - NC Cooperative Fish and Wildlife Research Unit
  - Leetown Science Center

ENC/SEVA Relationship to the SALCC




Conservation Partnership Areas in the ENC/SEVA
Albemarle-Pamlico National Estuary Program
Albemarle-Pamlico Conservation and Communites Collaborative
Upper Tar Collaboration
Chatham Conservation Partnership
Greater Uwharrie Conservation Partnership
North Carolina Sandhills Conservation Partnership
Cape Fear Arch Conservation Collaboration
Onslow Bight Conservation Forum
N
W
E
S
0 10 20 40 60 80
Miles
Legend
Roanoake-Tar-Neuse-Cape Fear Basins
Chatham Conservation Partnership
Virginia Counties
NC Counties
Greater Uwharrie Conservation Partnership
North Carolina Sandhills Conservation Partnership
Cape Fear Arch Conservation Collaboration
Onslow Bight Conservation Forum
Upper Tar Collaboration
Albemarle-Pamlico National Esuary Program
APCCC Extent

ENC/SEVA Team Focus

Working together and with our partners, promote strategic landscape-level conservation in the Eastern North Carolina/ Southeastern Virginia (ENC/SEVA) Eco-region

1. Adaptively identify landscape conservation needs and priorities;
2. Establish annual, mutual conservation goals and objectives;
3. Identify challenges and opportunities for SHC implementation and develop remedies;
4. Establish and foster partnerships to accomplish landscape-level conservation goals and objectives;
5. Implement strategies to accomplish mutual goals and objectives within the ENC/SEVA Eco-region.

To Achieve Goal: a cross-collaborative, conservation plan to enable/facilitate action across the eco-region

- ✓ Does the network of lands need to be adapted? – where, when, with who?
- ✓ What are the targets of conservation focus? – what, how much?
- ✓ What is best management given the threats
- ✓ What is success and how will we recognize it?
- ✓ What is it we know and don't know (research gaps)?

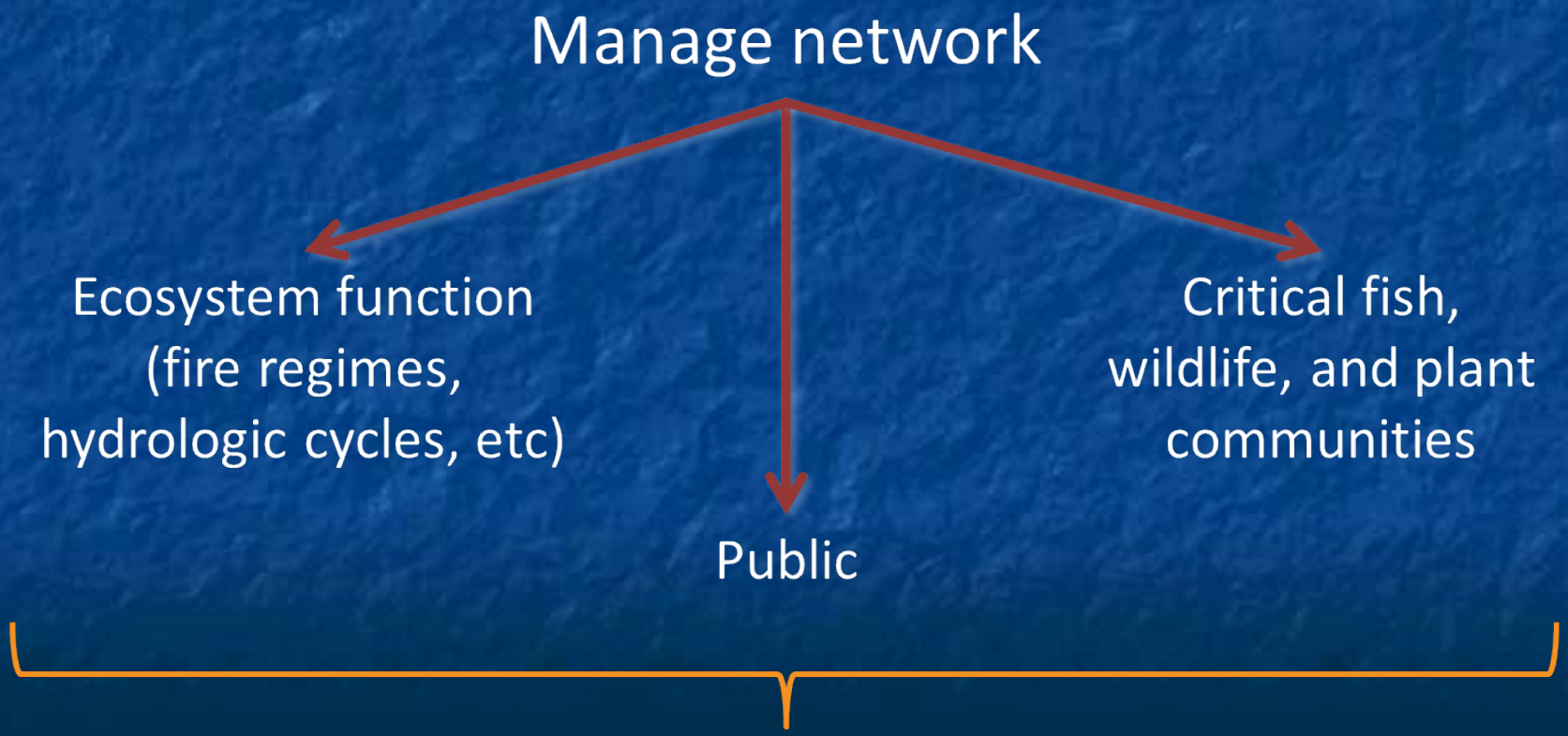
ENC/SEVA Direction

- Work with partners to assess the current status of the landscape, determine priority species & habitats, identify threats, and employ Strategic Habitat Conservation in concert with our partners

- Develop a strategic plan clearly defining eco-regional management goals (habitat and species population objectives) and metrics of success

- Provide technical guidance (identify/manage priority & focal species & habitats)

ENCSEVA's VISION of SUCCESS a network of lands sustaining resilient populations of priority fauna and flora within eastern NC and Southeast VA

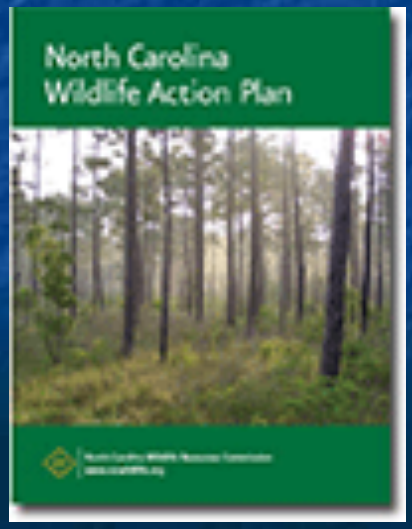


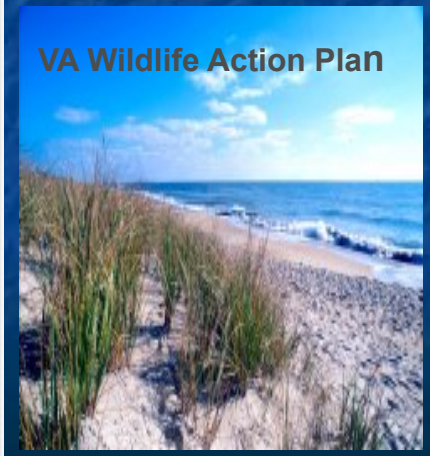
National

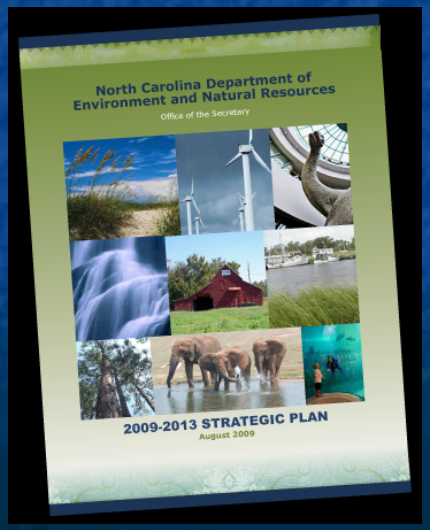
Regional

CCMP

State







Land Specific

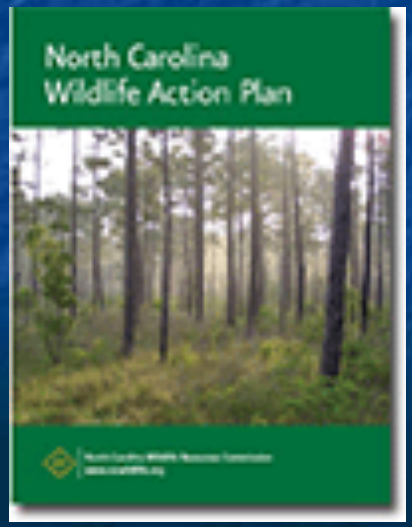
National

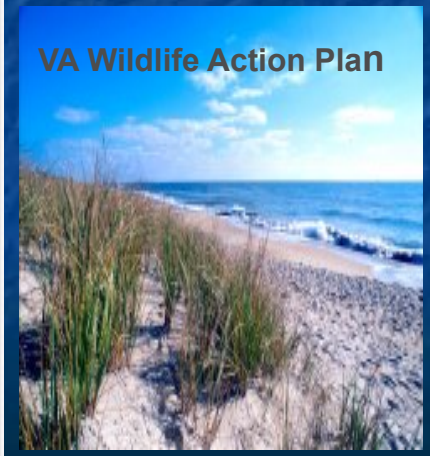
Regional

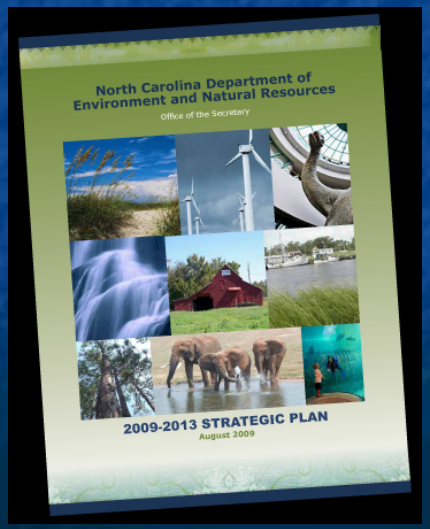
CCMP

Expert Elicitation

State



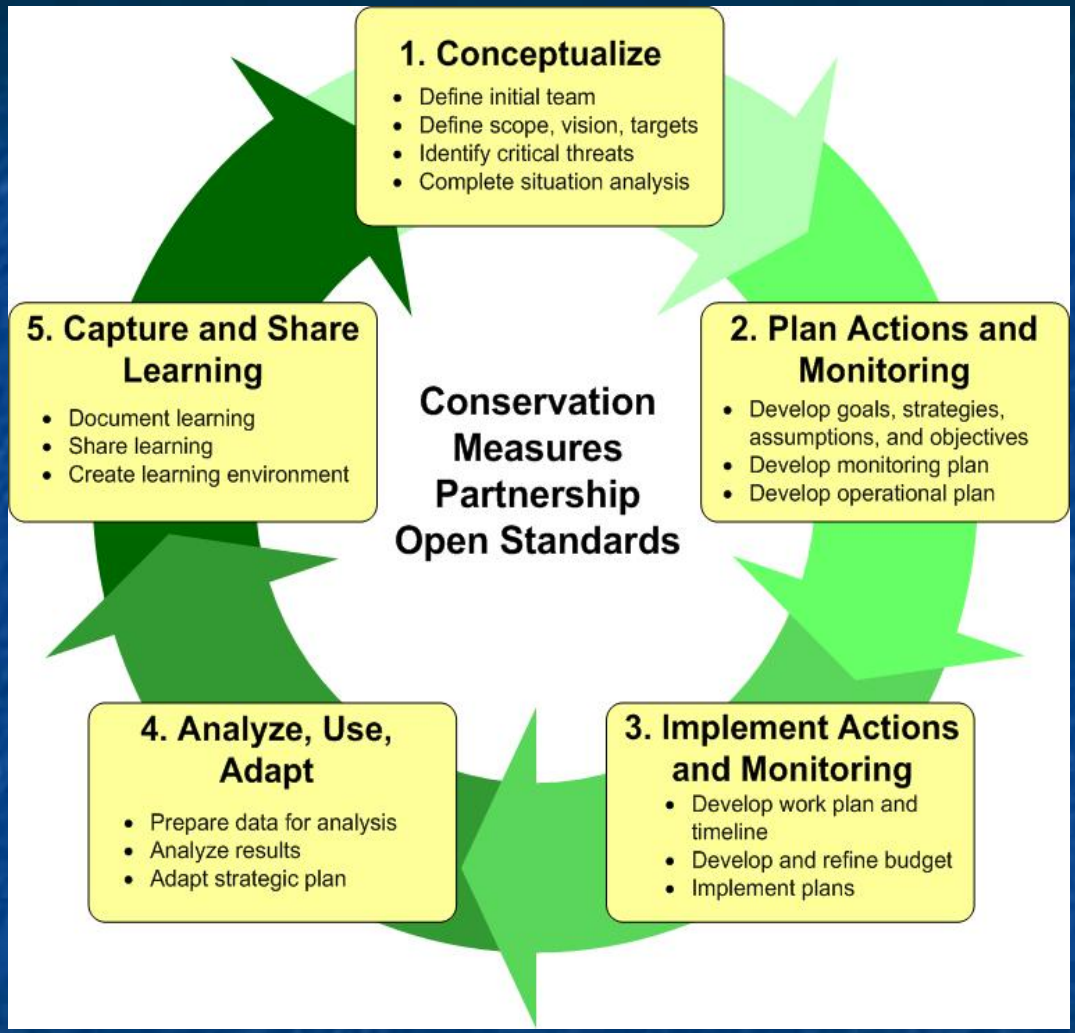




Land Specific

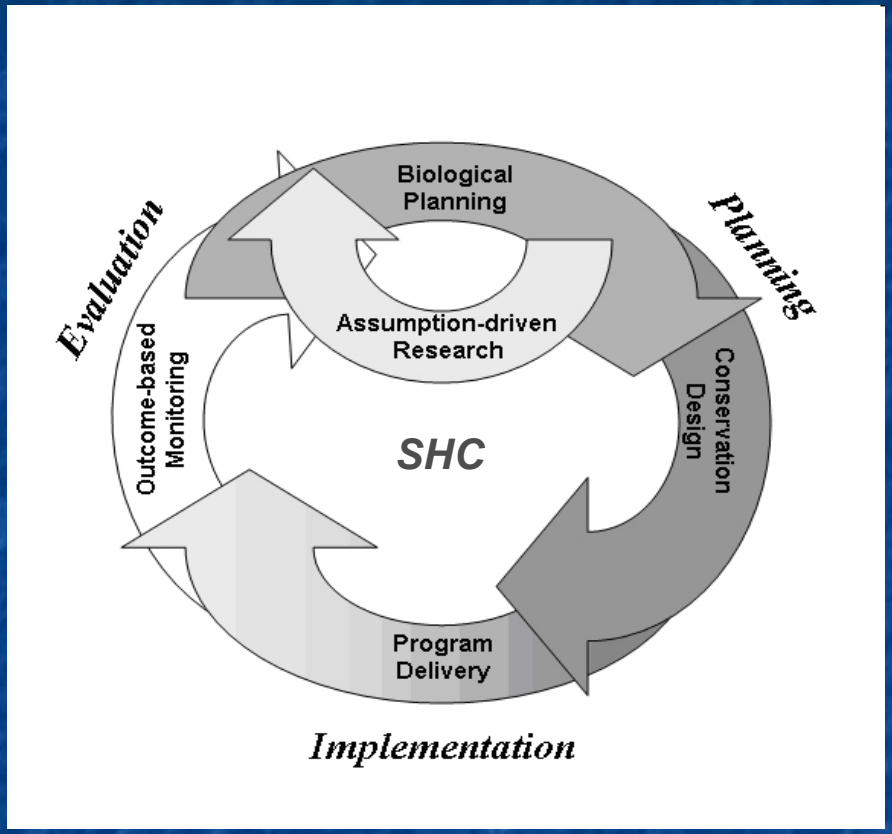
The Tool

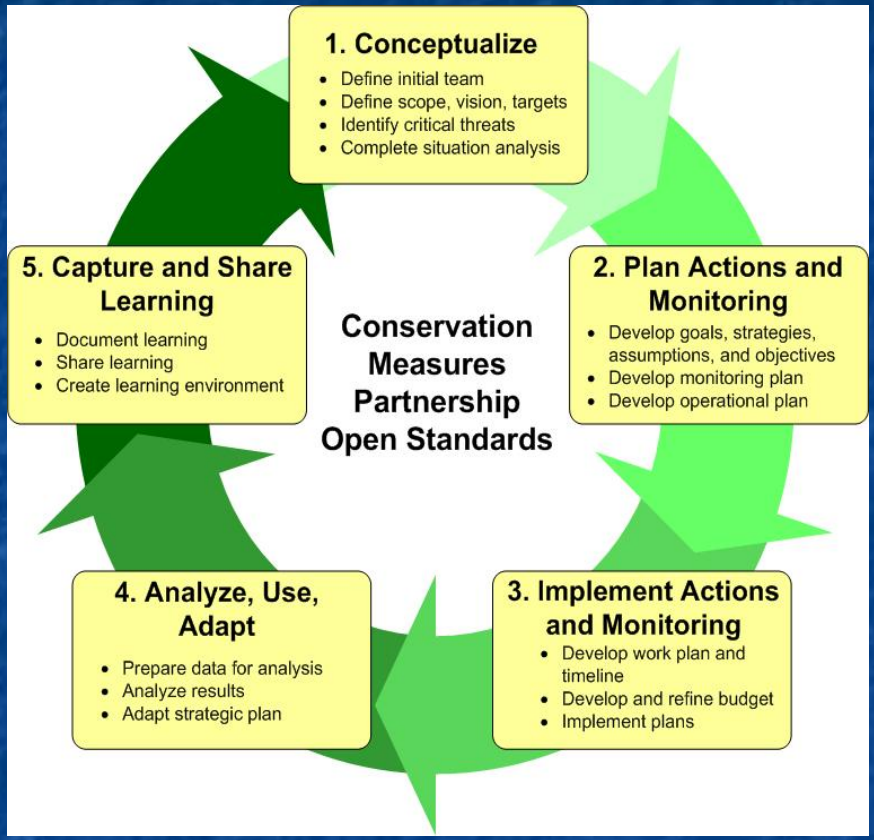
- Developed by the Conservation Measures Partnership, rooted in adaptive management
- Based on reviews of interdisciplinary fields to determine common concepts/ approaches to good project design, management, and monitoring



Open Standards for the Practice of Conservation

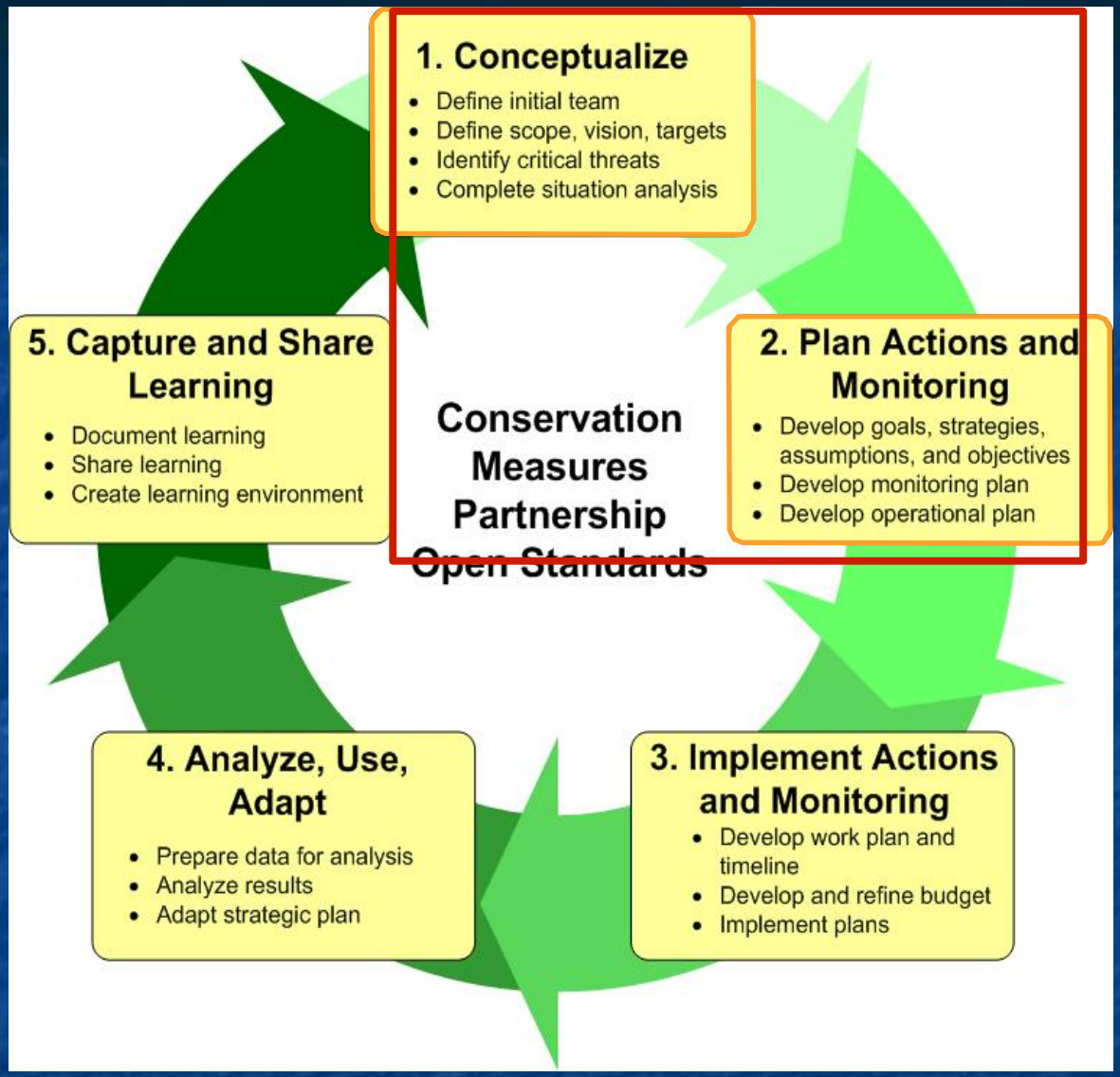
Adaptive Management in Practice





Step 1:
- Define team
- Define scope, vision, targets
  - *Key Ecological Attributes (KEAs)*
  - *Indicators of KEAs*
- Identify critical threats
  - *Identify indirect threats*
- Complete situation analysis

Step 2:
- Developing goals, strategies, assumptions and objectives
- Develop monitoring plans
- Develop operational plan

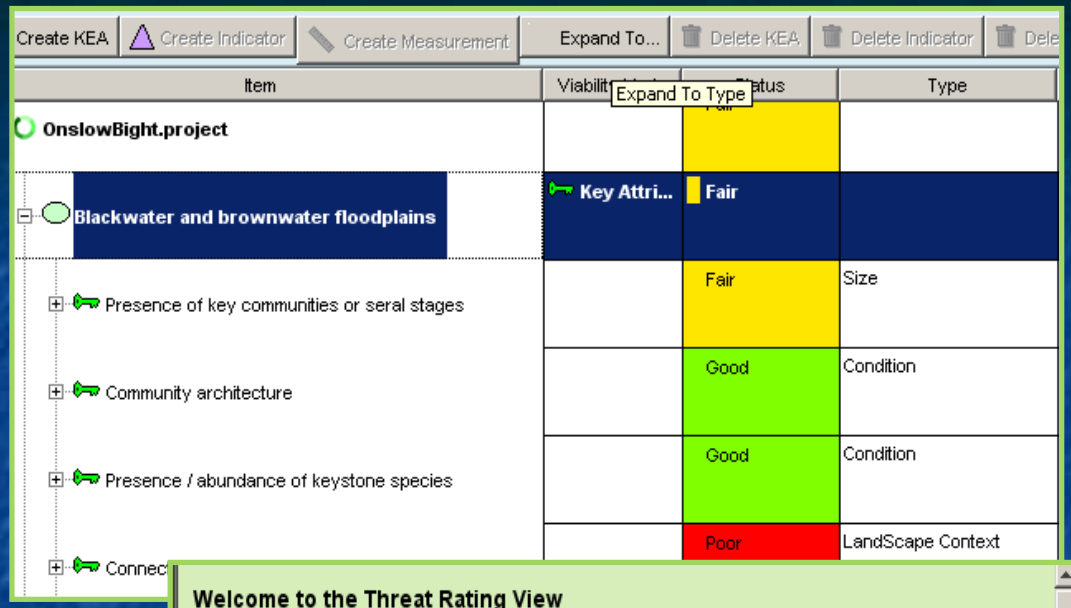


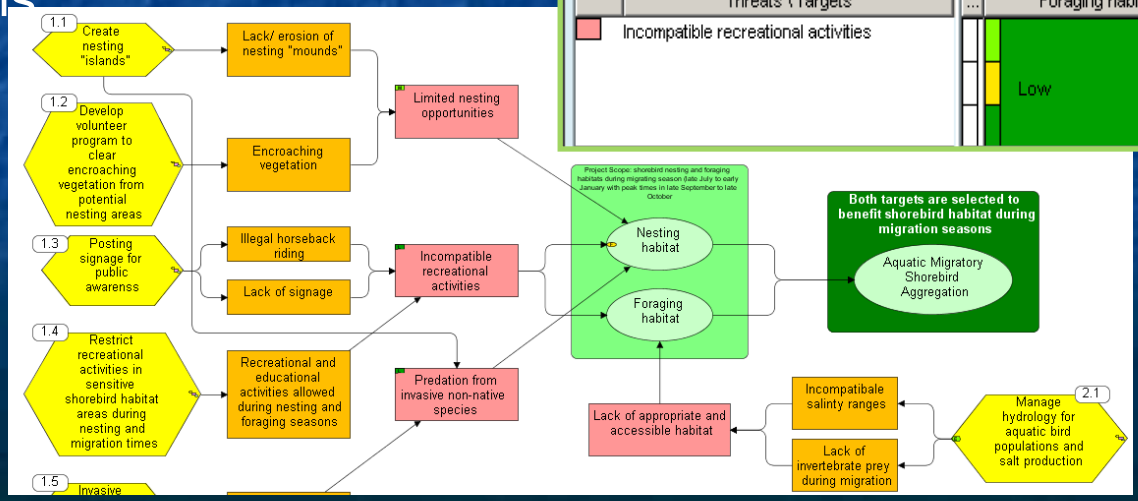
Applying the Open Standards for ENC SEVA

The Tool's Tool

MIRADI

- An adaptive management software
- A tool to organize projects, illustrate concepts and relationships, and evaluate conservation oriented actions





Scope: Portions of the Coastal Plain and Piedmont physiographic regions, & marine habitats as appropriate, located within eastern North Carolina and southeastern Virginia

Vision statement: A network of public and private lands & waters that sustain resilient populations of priority fish, wildlife, & plants, as well as the habitats on which they depend, for the benefit and appreciation of current and future generations.

Ecological Systems: 1. Wetlands, 2. Riverine systems, 3. Marine systems, 4. Estuarine systems, 5. Uplands, and 6. Barrier Islands

Ecological Systems

- Marine
- Barrier Islands
- Estuarine
- Wetlands
- Uplands
- Riverine

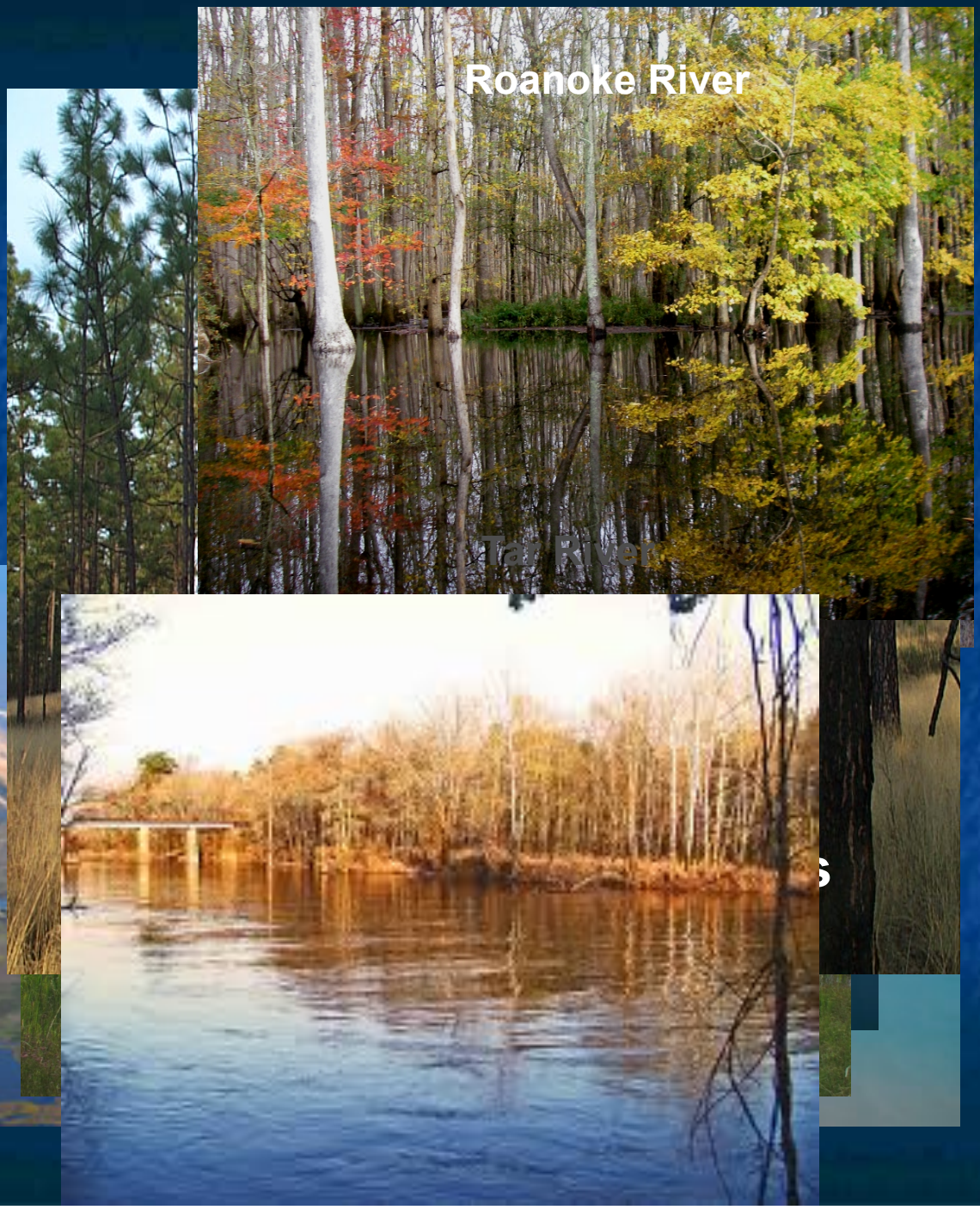
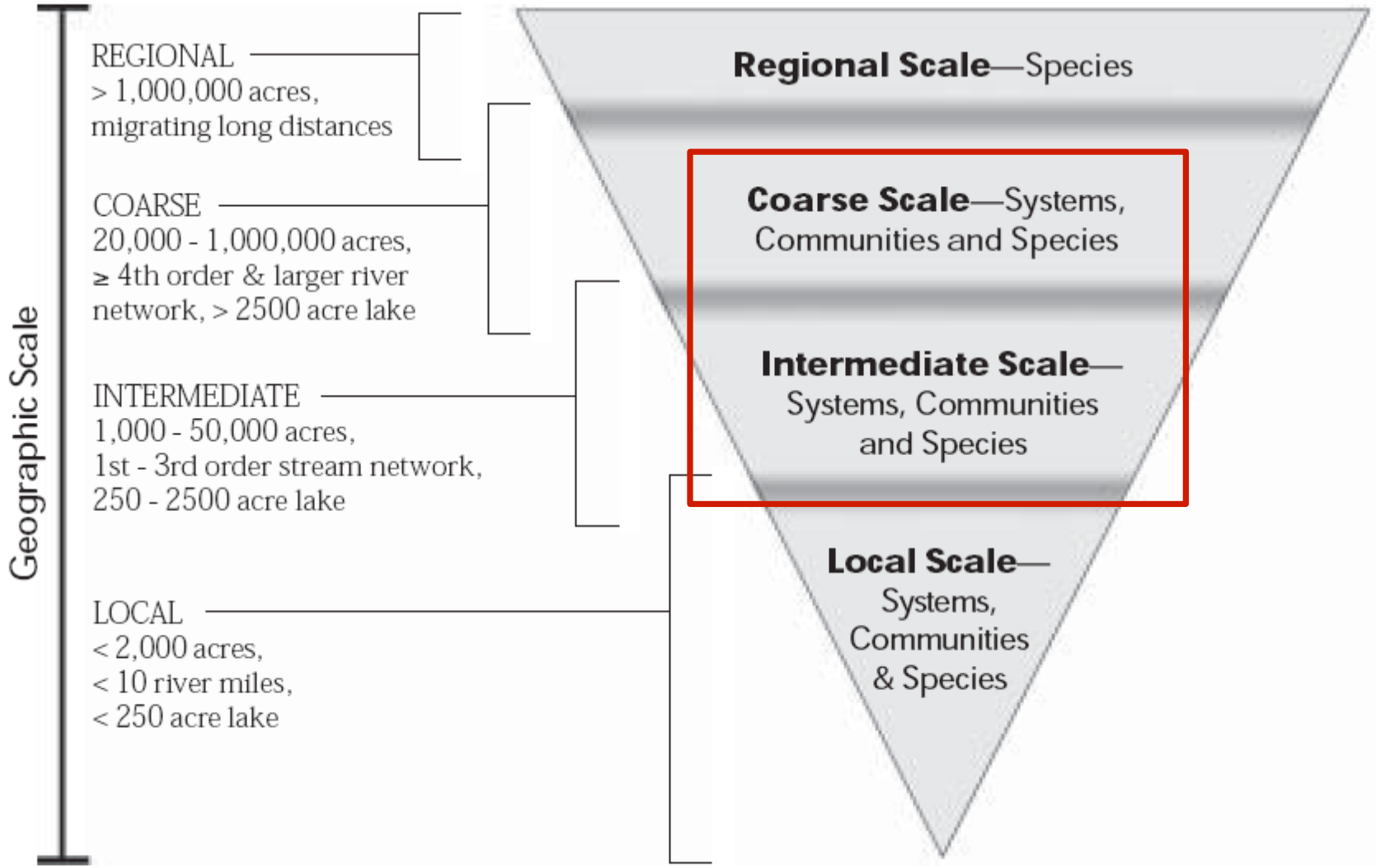
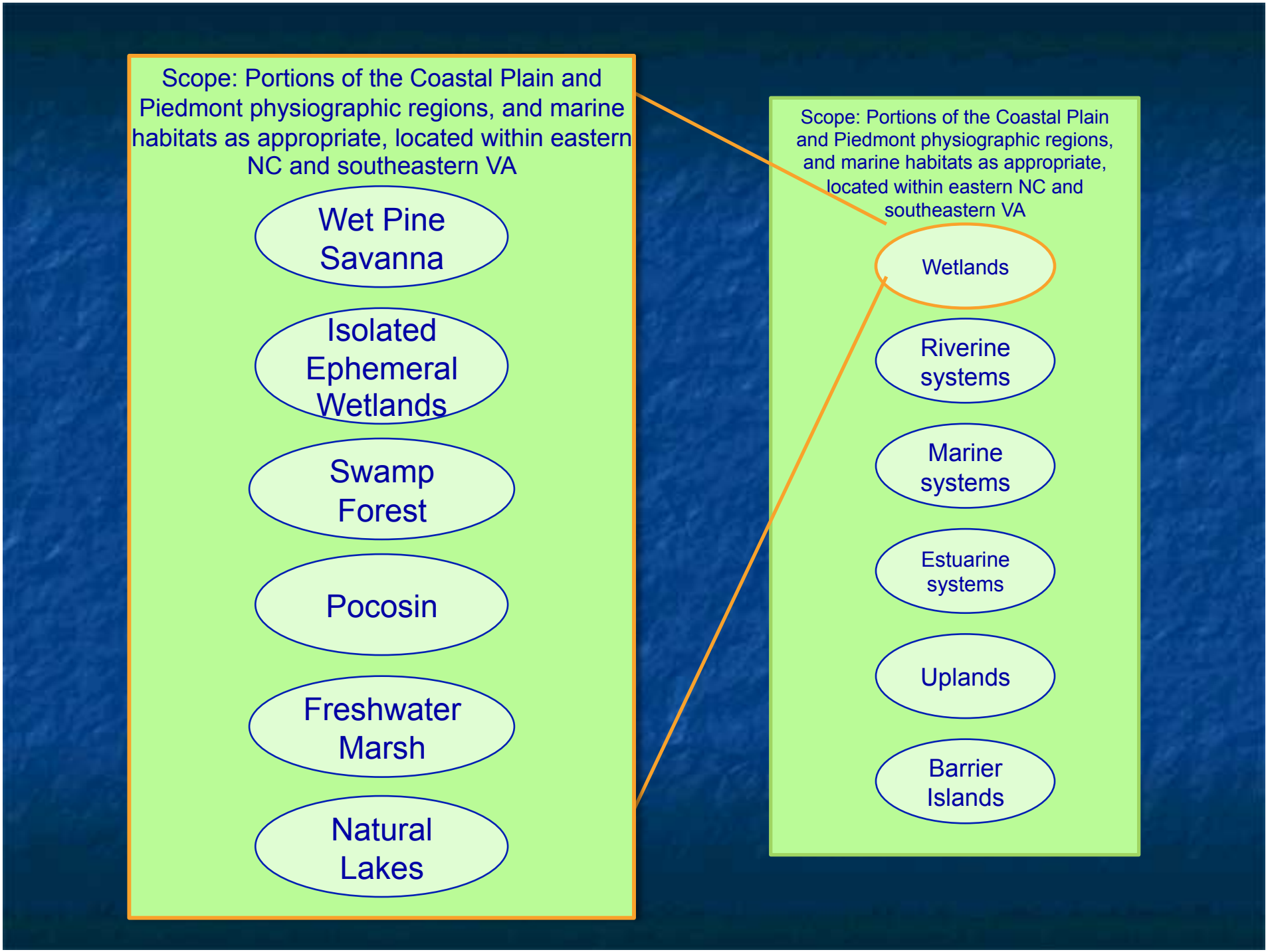


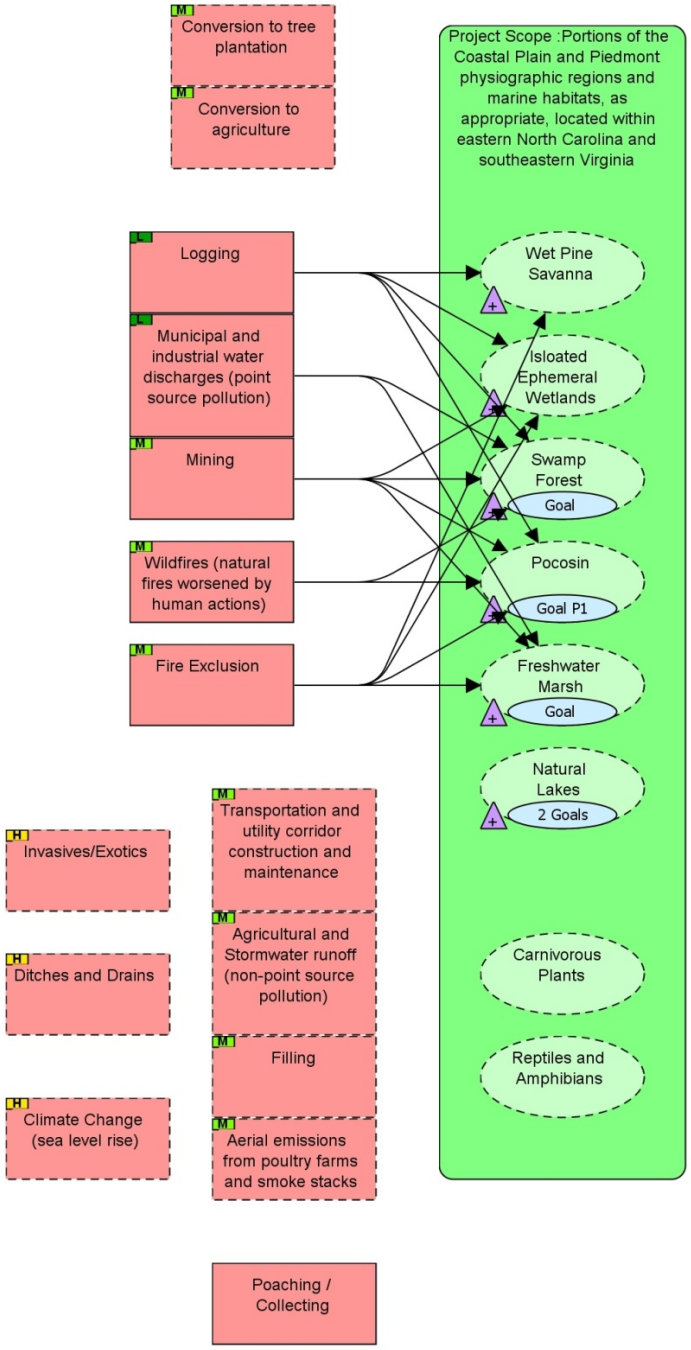
Figure 1


Geographic Scale
REGIONAL
> 1,000,000 acres,
migrating long distances
COARSE
20,000 - 1,000,000 acres,
≥ 4th order & larger river
network, > 2500 acre lake
INTERMEDIATE
1,000 - 50,000 acres,
1st - 3rd order stream network,
250 - 2500 acre lake
LOCAL
< 2,000 acres,
< 10 river miles,
< 250 acre lake
Regional Scale—Species
Coarse Scale—Systems,
Communities and Species
Intermediate Scale—
Systems, Communities
and Species
Local Scale—
Systems,
Communities
& Species

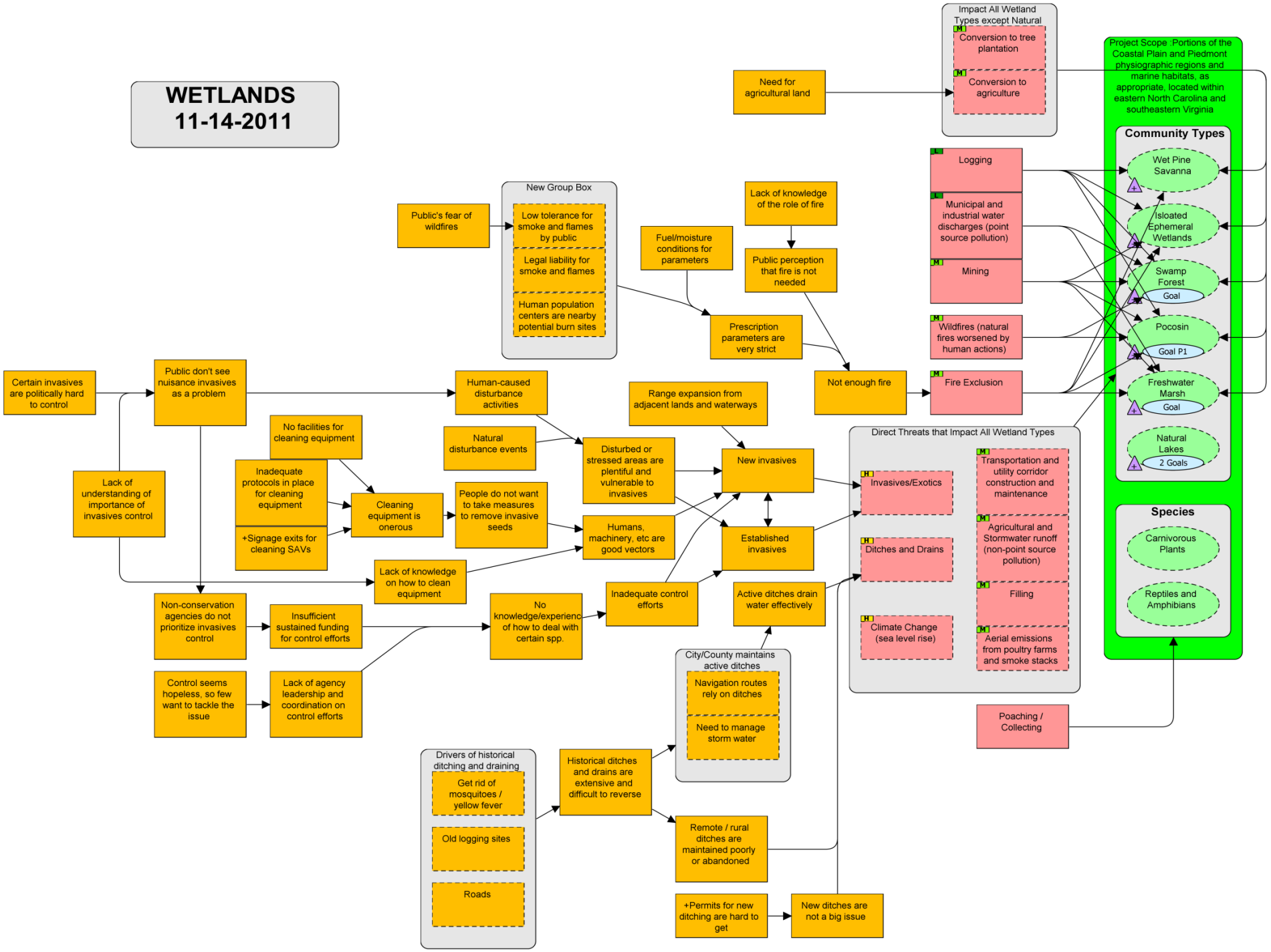

Scope: Portions of the Coastal Plain and Piedmont physiographic regions, and marine habitats as appropriate, located within eastern NC and southeastern VA
Wet Pine Savanna
Isolated Ephemeral Wetlands
Swamp Forest
Pocosin
Freshwater Marsh
Natural Lakes
Scope: Portions of the Coastal Plain and Piedmont physiographic regions, and marine habitats as appropriate, located within eastern NC and southeastern VA
Wetlands
Riverine systems
Marine systems
Estuarine systems
Uplands
Barrier Islands

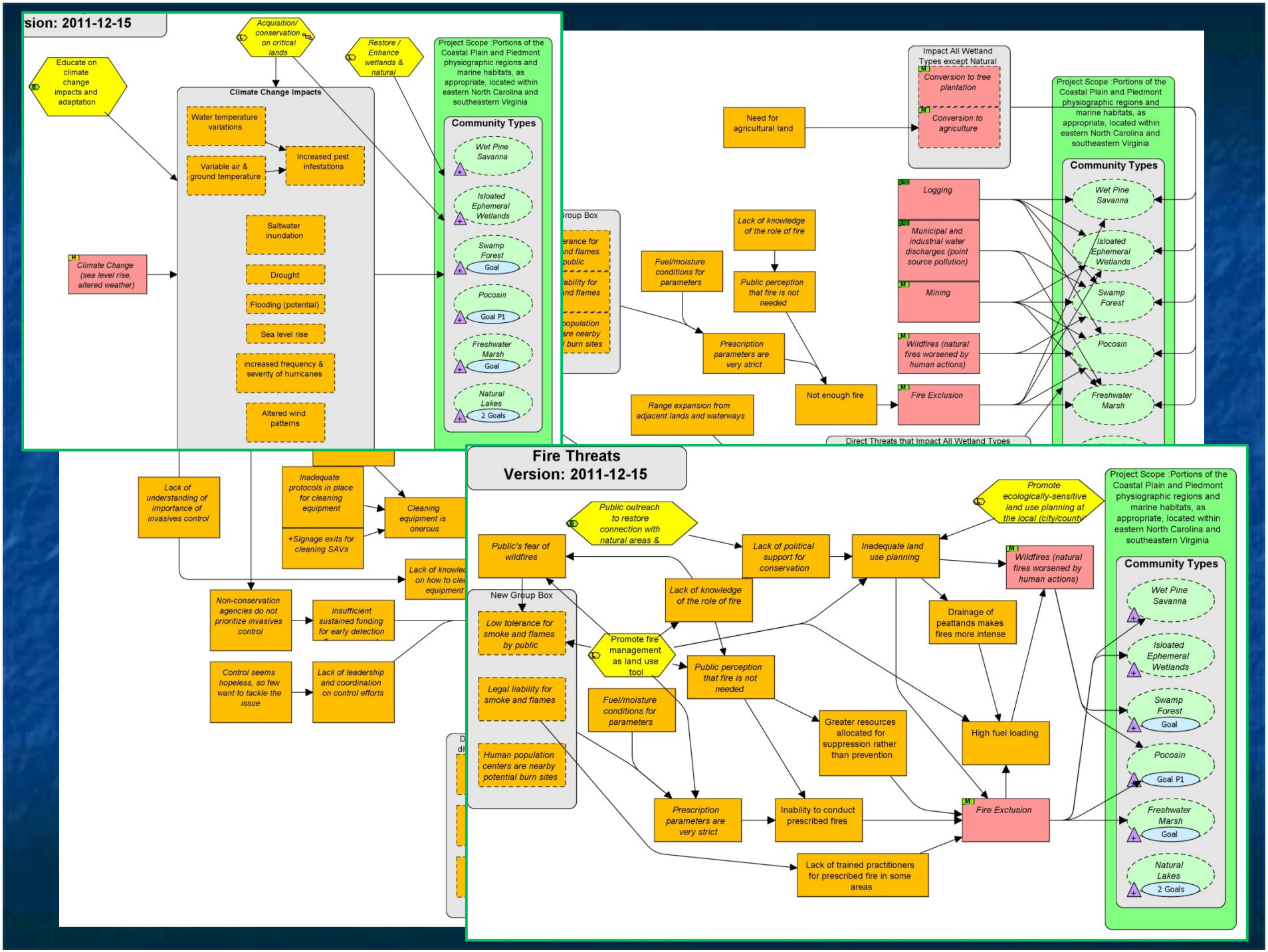
WETLANDS

Direct Threats



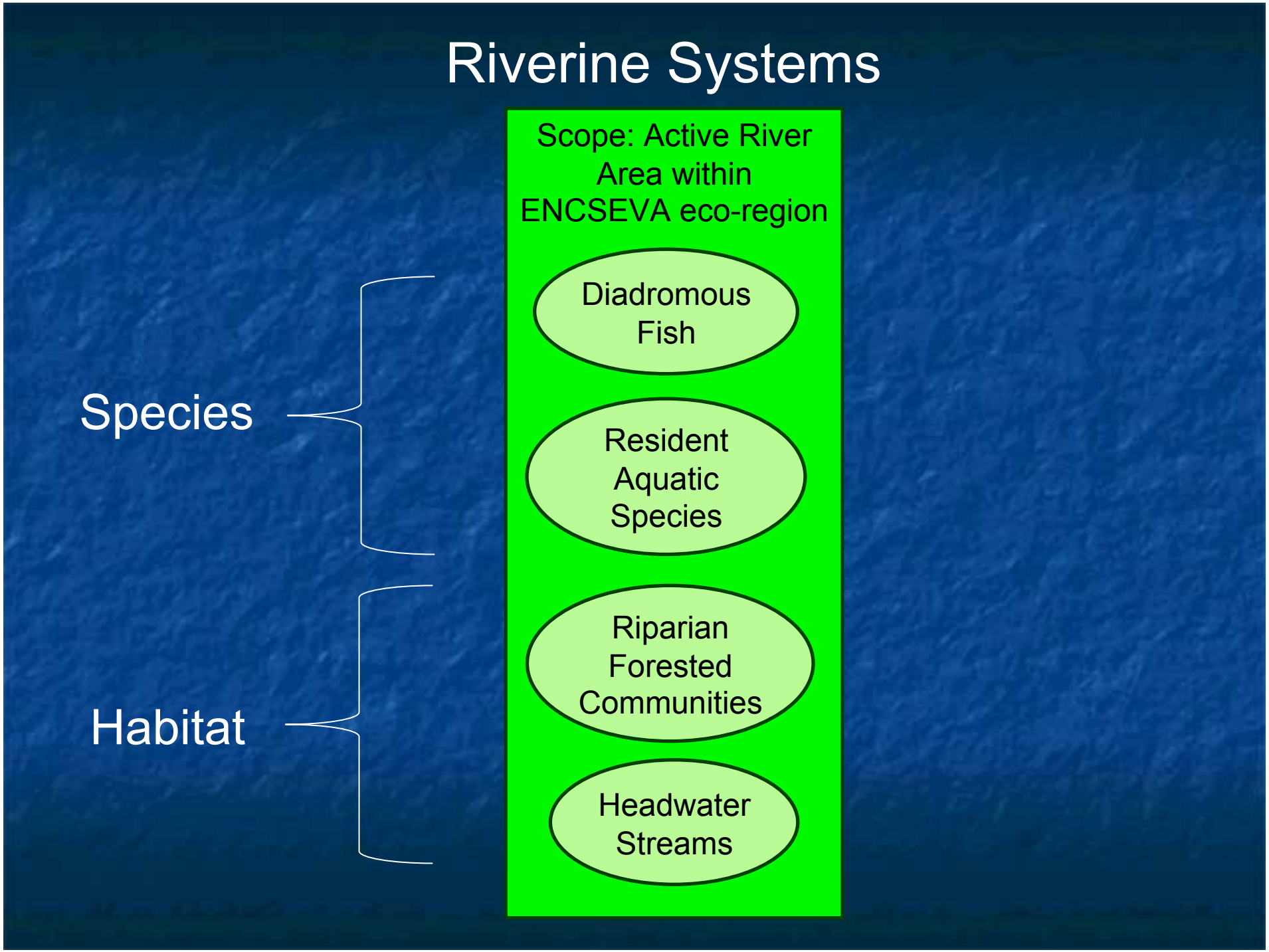
Targets


WETLANDS
11-14-2011
Impact All Wetland Types except Natural
Conversion to tree plantation
Conversion to agriculture
Need for agricultural land
Project Scope :Portions of the Coastal Plain and Piedmont physiographic regions and marine habitats, as appropriate, located within eastern North Carolina and southeastern Virginia
Community Types
Wet Pine Savanna
Isloated Ephemeral Wetlands
Swamp Forest
Goal
Pocosin
Goal P1
Freshwater Marsh
Goal
Natural Lakes
2 Goals
Species
Carnivorous Plants
Reptiles and Amphibians
Logging
Municipal and industrial water discharges (point source pollution)
Mining
Wildfires (natural fires worsened by human actions)
Fire Exclusion
Not enough fire
New Group Box
Low tolerance for smoke and flames by public
Legal liability for smoke and flames
Human population centers are nearby potential burn sites
Public's fear of wildfires
Fuel/moisture conditions for parameters
Lack of knowledge of the role of fire
Public perception that fire is not needed
Prescription parameters are very strict
Certain invasives are politically hard to control
Public don't see nuisance invasives as a problem
Human-caused disturbance activities
Natural disturbance events
Range expansion from adjacent lands and waterways
Disturbed or stressed areas are plentiful and vulnerable to invasives
New invasives
Established invasives
No facilities for cleaning equipment
Inadequate protocols in place for cleaning equipment
+Signage exits for cleaning SAVs
Cleaning equipment is onerous
People do not want to take measures to remove invasive seeds
Humans, machinery, etc are good vectors
Lack of understanding of importance of invasives control
Lack of knowledge on how to clean equipment
Non-conservation agencies do not prioritize invasives control
Insufficient sustained funding for control efforts
Control seems hopeless, so few want to tackle the issue
Lack of agency leadership and coordination on control efforts
No knowledge/experienc of how to deal with certain spp.
Inadequate control efforts
Active ditches drain water effectively
Direct Threats that Impact All Wetland Types
Invasives/Exotics
Ditches and Drains
Climate Change (sea level rise)
Transportation and utility corridor construction and maintenance
Agricultural and Stormwater runoff (non-point source pollution)
Filling
Aerial emissions from poultry farms and smoke stacks
Poaching / Collecting
City/County maintains active ditches
Navigation routes rely on ditches
Need to manage storm water
Drivers of historical ditching and draining
Get rid of mosquitoes / yellow fever
Old logging sites
Roads
Historical ditches and drains are extensive and difficult to reverse
Remote / rural ditches are maintained poorly or abandoned
+Permits for new ditching are hard to get
New ditches are not a big issue


sion: 2011-12-15
Acquisition/ conservation on critical lands
Restore / Enhance wetlands & natural
Educate on climate change impacts and adaptation
Project Scope :Portions of the Coastal Plain and Piedmont physiographic regions and marine habitats, as appropriate, located within eastern North Carolina and southeastern Virginia
Climate Change Impacts
Water temperature variations
Variable air & ground temperature
Increased pest infestations
Saltwater inundation
Climate Change (sea level rise, altered weather)
Drought
Flooding (potential)
Sea level rise
increased frequency & severity of hurricanes
Altered wind patterns
Community Types
Wet Pine Savanna
Isloated Ephemeral Wetlands
Swamp Forest
Goal
Pocosin
Goal P1
Freshwater Marsh
Goal
Natural Lakes
2 Goals
Impact All Wetland Types except Natural
Conversion to tree plantation
Conversion to agriculture
Need for agricultural land
Logging
Municipal and industrial water discharges (point source pollution)
Mining
Wildfires (natural fires worsened by human actions)
Fire Exclusion
Lack of knowledge of the role of fire
Public perception that fire is not needed
Fuel/moisture conditions for parameters
Prescription parameters are very strict
Not enough fire
Range expansion from adjacent lands and waterways
Direct Threats that Impact All Wetland Types
Lack of understanding of importance of invasives control
Inadequate protocols in place for cleaning equipment
+Signage exits for cleaning SAVs
Cleaning equipment is onerous
Non-conservation agencies do not prioritize invasives control
Insufficient sustained funding for early detection
Control seems hopeless, so few want to tackle the issue
Lack of leadership and coordination on control efforts
Fire Threats
Version: 2011-12-15
Public outreach to restore connection with natural areas &
Promote ecologically-sensitive land use planning at the local (city/county)
Public's fear of wildfires
Lack of political support for conservation
Inadequate land use planning
Wildfires (natural fires worsened by human actions)
Lack of knowledge of the role of fire
Drainage of peatlands makes fires more intense
New Group Box
Low tolerance for smoke and flames by public
Promote fire management as land use tool
Public perception that fire is not needed
Legal liability for smoke and flames
Fuel/moisture conditions for parameters
Greater resources allocated for suppression rather than prevention
High fuel loading
Human population centers are nearby potential burn sites
Prescription parameters are very strict
Inability to conduct prescribed fires
Fire Exclusion
Lack of trained practitioners for prescribed fire in some areas

Isolated Wetlands

Riverine Systems



DIADROMOUS FISH: This target is defined as the eight species of diadromous fish present in ENSCEVA's geographical region and habitat conditions critical for meeting their life cycle requirements. For the purposes of this analysis we exclude the physiological requirements and population structures of these species and focus solely on key ecological attributes of their habitats.

GOAL(S): Restore the hydrologic connectivity to XX amount of river miles for the purposes of providing high quality habitat for diadromous fish and allowing the species to reach habitat critical for life cycles.

	Indicator	Rating (poor, fair, good, very good)
KEA: Hydrologic Connectivity *State of Success: Contiguous riverine habitat in a lateral and longitudinal dimension with few to no blockages and allowing for the migrations of movements of the species which depend on connectivity to complete life cycles.*		
- Connectivity refers to contiguous acreage of riverine habitat with both a latitudinal and longitudinal dimension - Obstructions refer to anthropogenic blockages (dams, reservoirs, culverts, etc.) as well as lack of water to facilitate passage to potential habitat - Levels of obstruction are subject to scale, i.e. light restriction, height - Indicator ratings for accessible habitat are dependent on species and size of area (i.e. basin vs. ecoregion)	Number of barriers per stream mile **Ratings dependent on stream size*	**Poor:** **Fair:** **Good:** **Very Good:** Few to none
	Amount of accessible habitat (historic extent, including connection to tributaries)	**Poor:** <25% of habitat is accessible **Fair:** 26-75% of habitat is accessible **Good:** 76-95% of habitat is accessible **Very Good:** No to few obstructions with >95% of habitat accessible
	Adequate water for passage and recolonization	**Poor:** Not enough water to allow passage/ movement to potential habitat **Fair:** Water allows passage and recolonization inconsistently, no management **Good:** Water allows passage and recolonization through management **Very Good:** adequate water/stream flow to allow passage

Things We Considered

- Target Selection: Habitats vs. Species
  - Species as Nested Targets
  - Species as Indicators of Habitat Integrity
- Incorporating Climate Change
  - Vulnerability Assessments for Habitats

Next Steps

- Compiling data to establish baseline condition for all targets
- Integrate Surrogate Species
- Incorporate CC Vulnerability Assessments and adapt as appropriate
- Continue to integrate with other ongoing planning efforts
  - SALCC, APNEP etc.
- Developing appropriate monitoring plans and securing capacity to implement collaboratively with partners

Discussion/Questions